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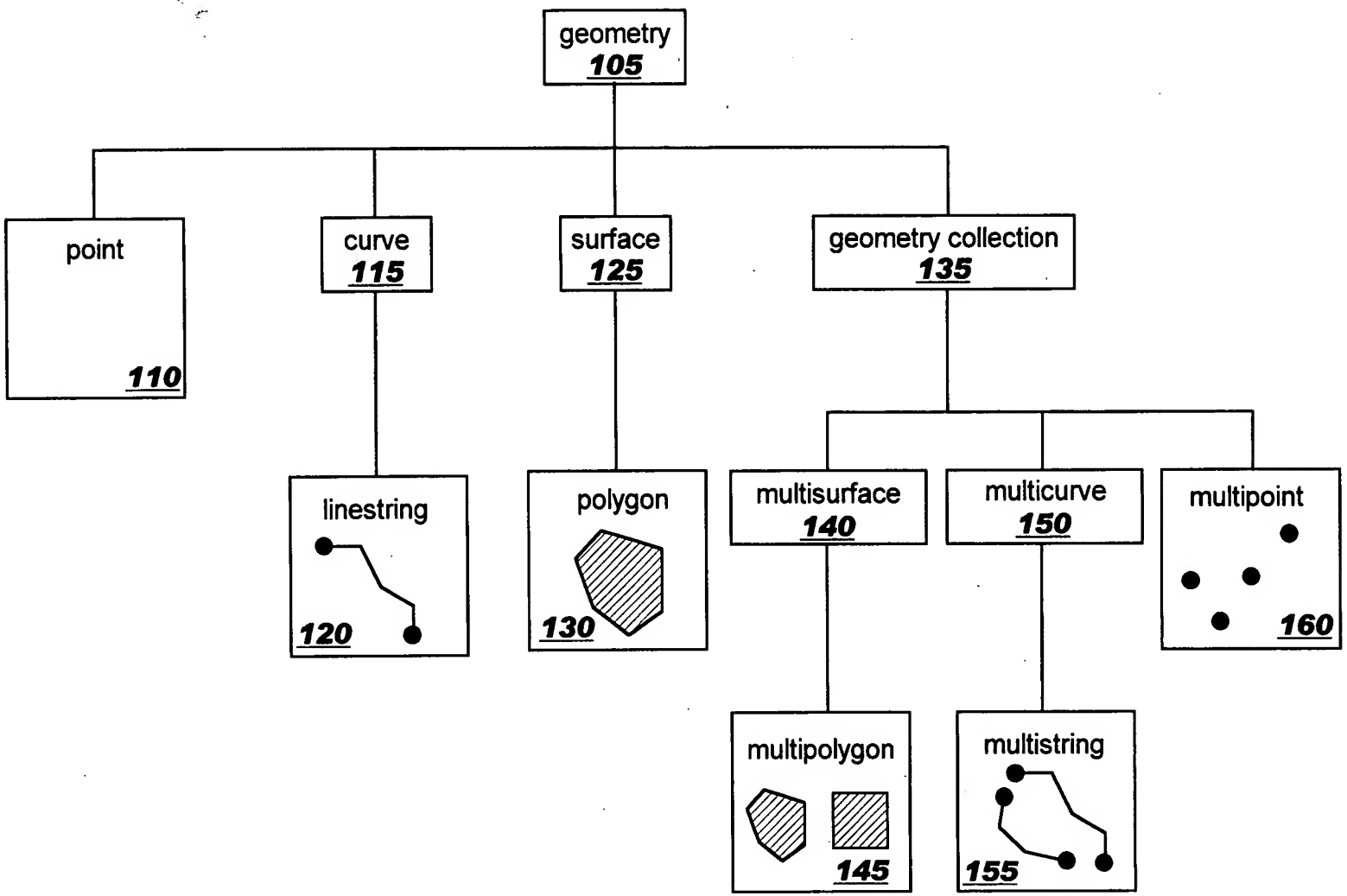
FIG. 1
(Prior Art)



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Programmatically Computing Street Intersections Using Street Geometry
F. Chen, et al.
1/12

FIG. 2

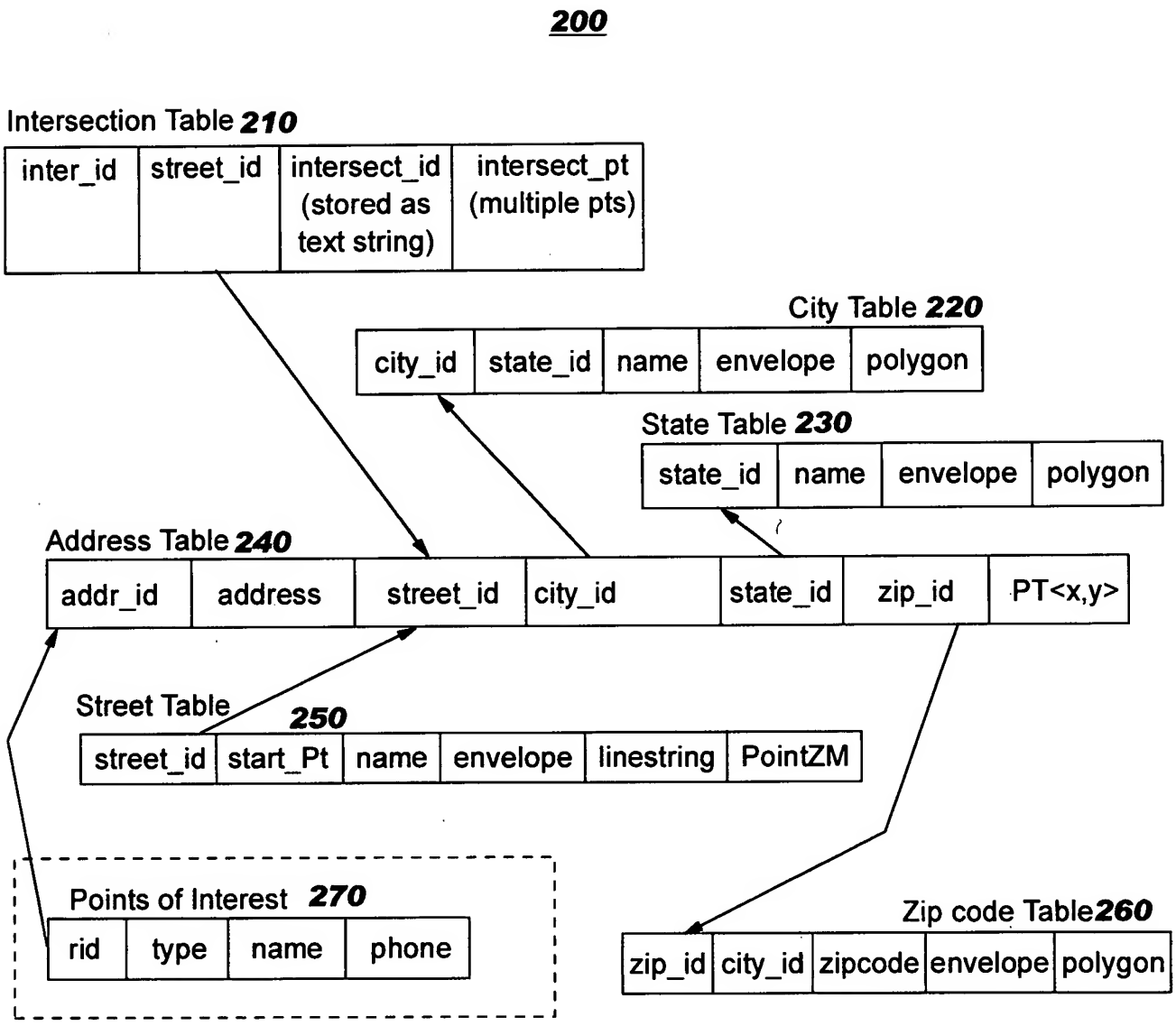
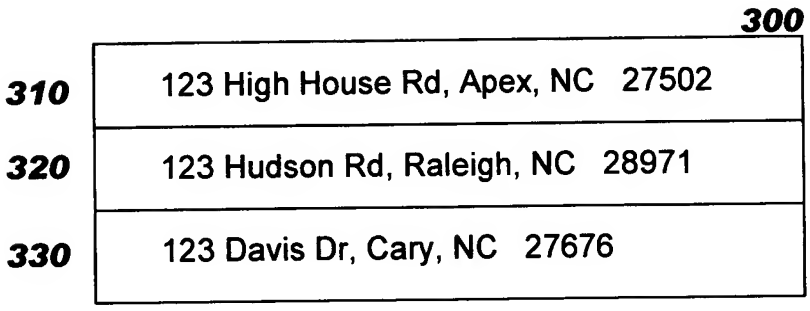

200
Intersection Table 210
inter_id
street_id
intersect_id (stored as text string)
intersect_pt (multiple pts)
City Table 220
city_id
state_id
name
envelope
polygon
State Table 230
state_id
name
envelope
polygon
Address Table 240
addr_id
address
street_id
city_id
state_id
zip_id
PT<x,y>
Street Table 250
street_id
start_Pt
name
envelope
linestring
PointZM
Points of Interest 270
rid
type
name
phone
Zip code Table 260
zip_id
city_id
zipcode
envelope
polygon

FIG. 3



10/2/2006, EAST Version: 2.1.0.14

FIG. 4

Major Geometry Tables

State Table **400**

state_id	abbr_name	name	envelope	polygon
1	NC	North Carolina	(b,b)	(p,p,p,p)
2	SC	South Carolina	(b,b)	(p,p,p,p)
3	VA	Virginia	(b,b)	(p,p,p,p)

City Table **430**

city_id	state_id	name	envelope	polygon
1	1	Raleigh	(b,b)	(p,p,p)
2	1	Cary	(b,b)	(p,p,p)
3	1	Apex	(b,b)	(p,p,p)
4	1	RTP	(b,b)	(p,p,p)
5	2	Charleston	(b,b)	(p,p,p)

Zip code Table **460**

zip_id	city_id	state_id	zipcode	envelope	polygon
1	3	1	27502	(b,b)	(p,p,p)
2	1	1	27707	(b,b)	(p,p,p)
3	1	1	27560	(b,b)	(p,p,p)
4	4	1	27709	(b,b)	(p,p,p)

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FIG. 5
Minor Geometry Tables

Address Table **500**

addr_id	address	street_id	city	state	zipcode	PT<x,y>
1	123 High House Rd	123	Apex	NC	27502	<35.9,78.2>
2	123 Hudson Rd	456	Raleigh	NC	28971	<34.567,78.3>
3	123 Davis Dr	789	Cary	NC	27676	<45.789,78.9

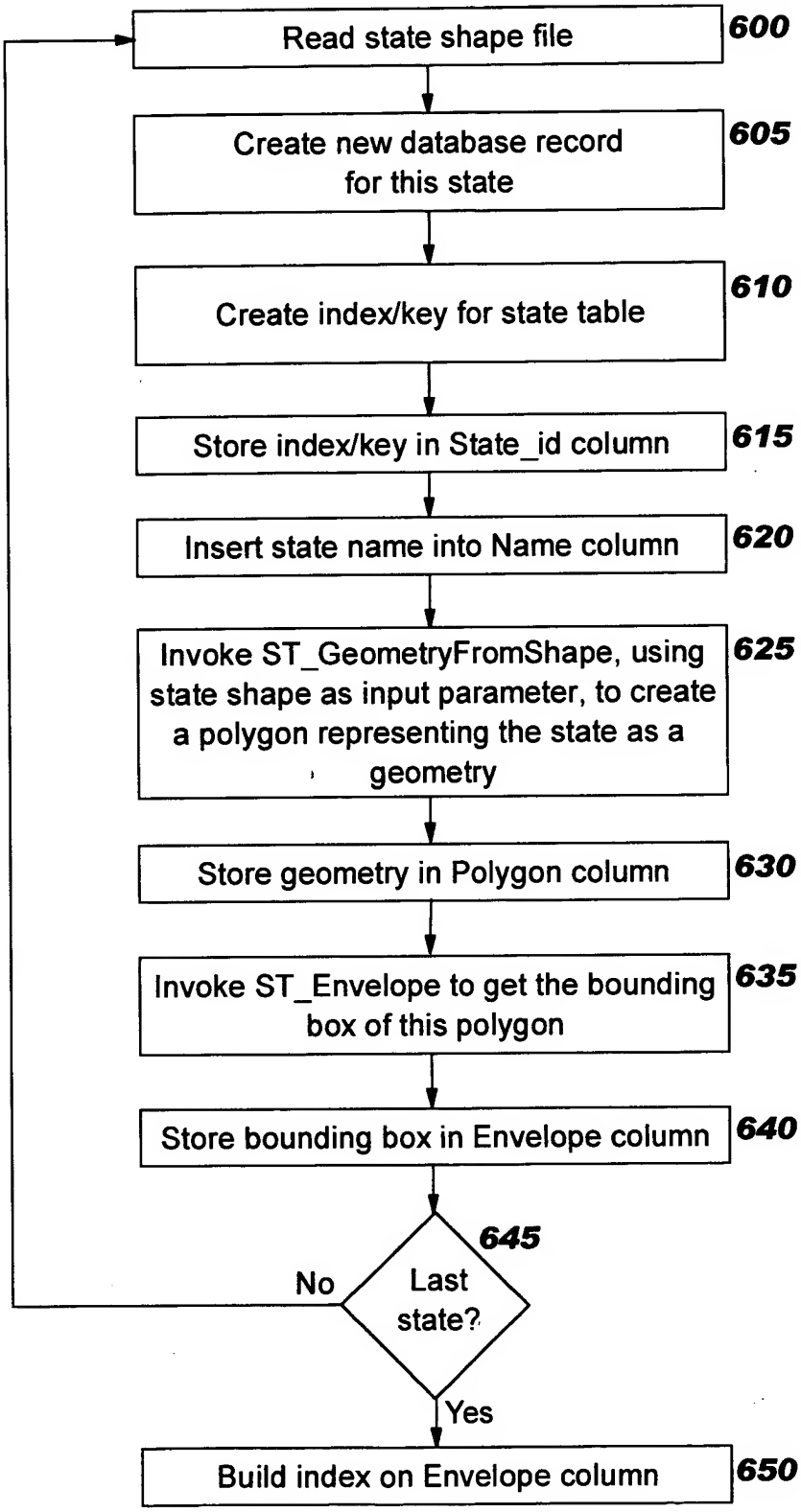
Street Table **530**

street_id	start_Pt	name	envelope	linestring	PointZM
123	<35.8,67.9>	High House Rd	(bounding box)	constructed when address inserted into table	<1,3 1,100> x=state_id y=city_id z=zip_id M=density point
456	<35.67,67.85>	Hudson Rd	b.b		<1,1,5,1>
789	<35.77,67.99>	Davis Dr	b.b		<1,2,6,1>

Intersection Table **560**

inter_id	street_id	intersect_id (stored as text string)	intersect_pt (multiple pts)
1	123	456	<35.66,78.92>
2	456	123,789	<35.66,78.92> <36.88,78.92>
3	789	456	<36.88,78.92>

FIG. 6



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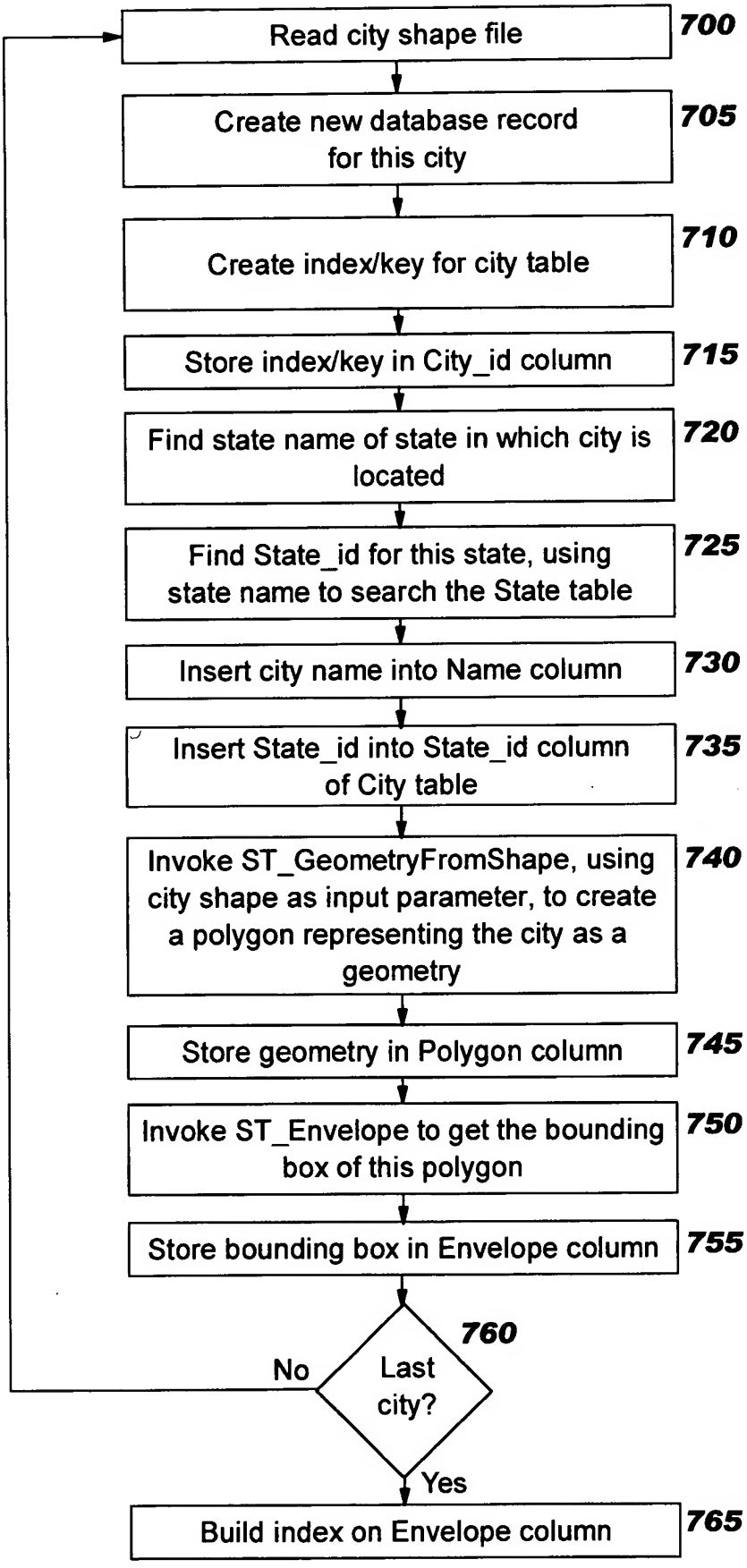

FIG. 7

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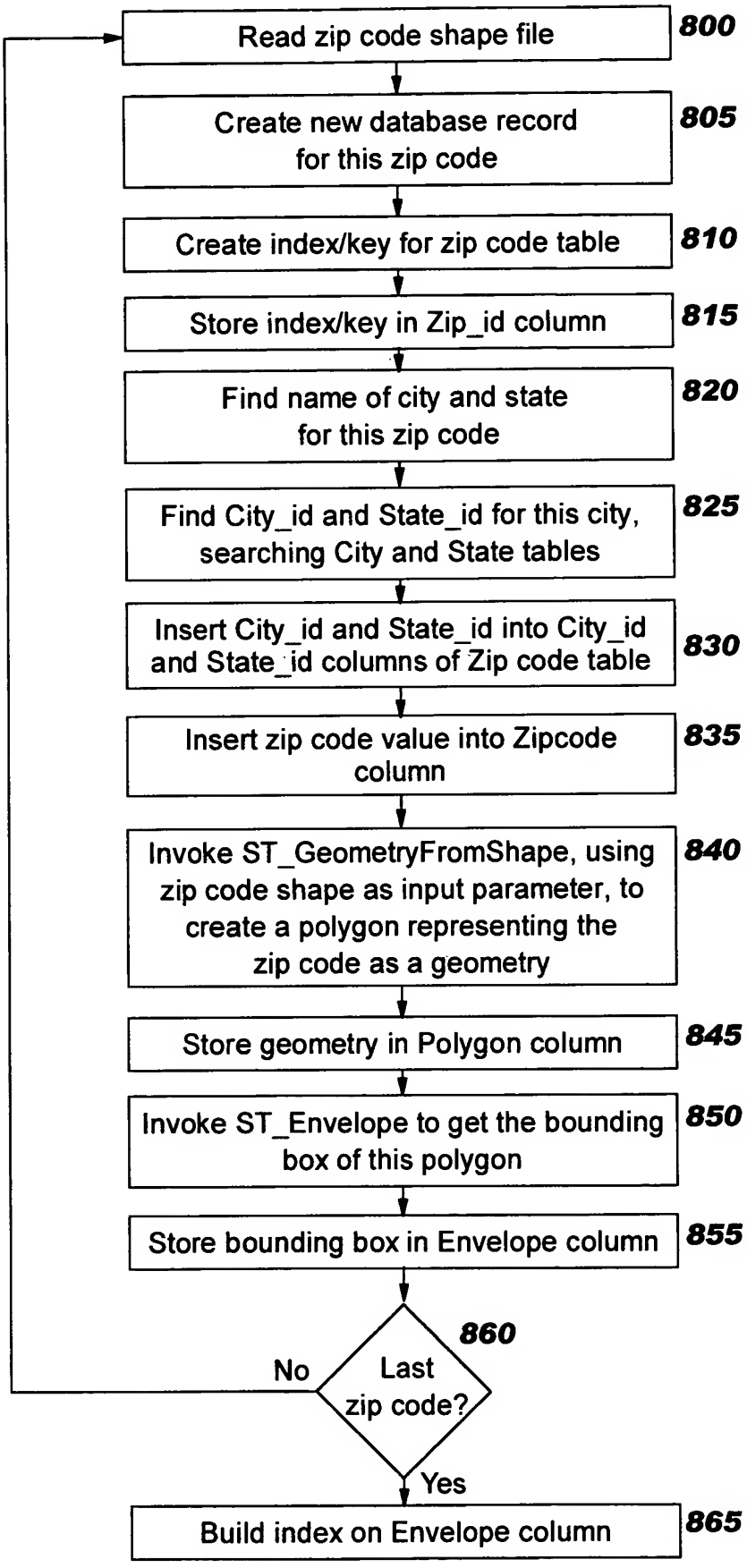

FIG. 8

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FIG. 9

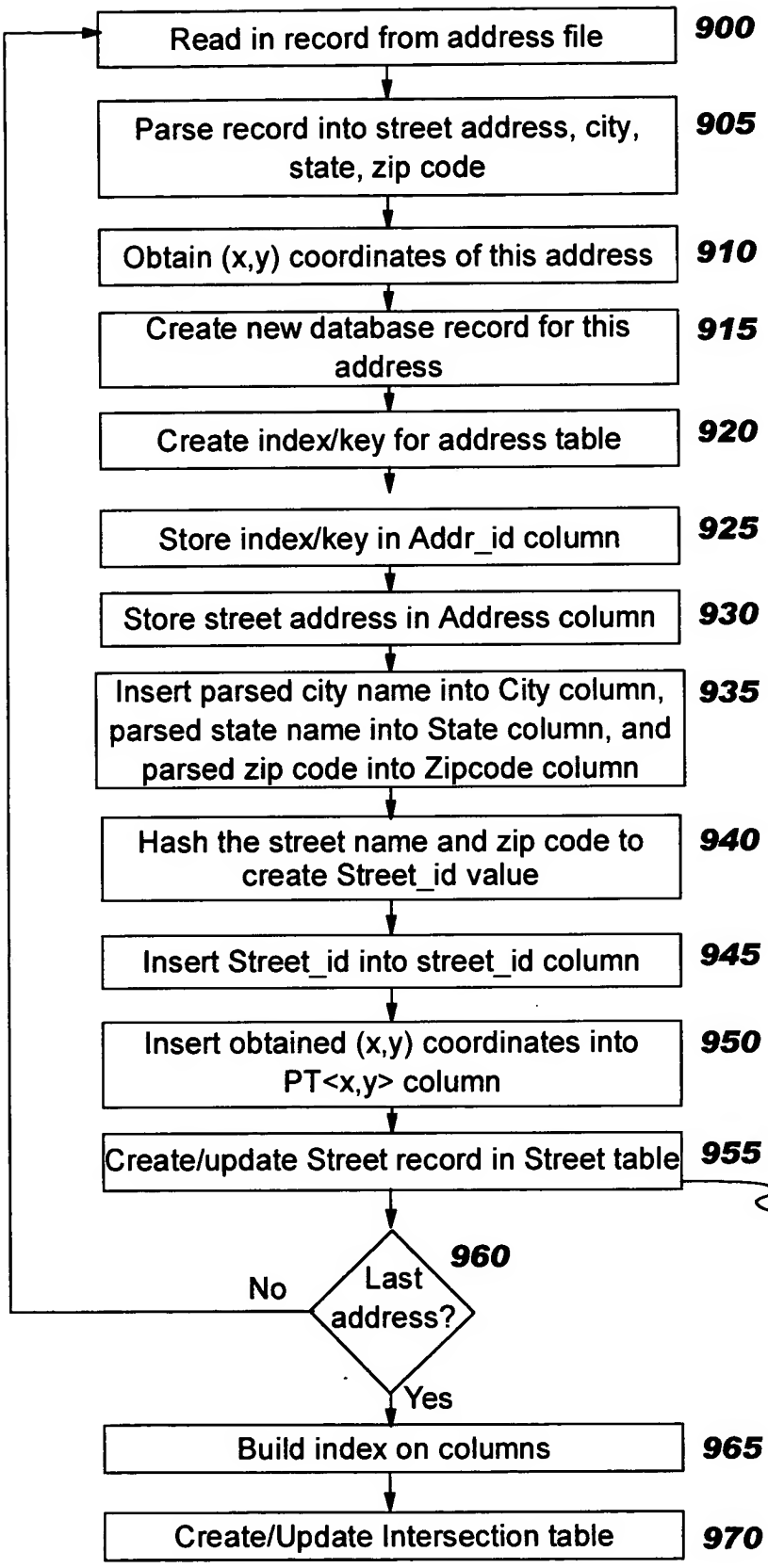

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FIG. 10

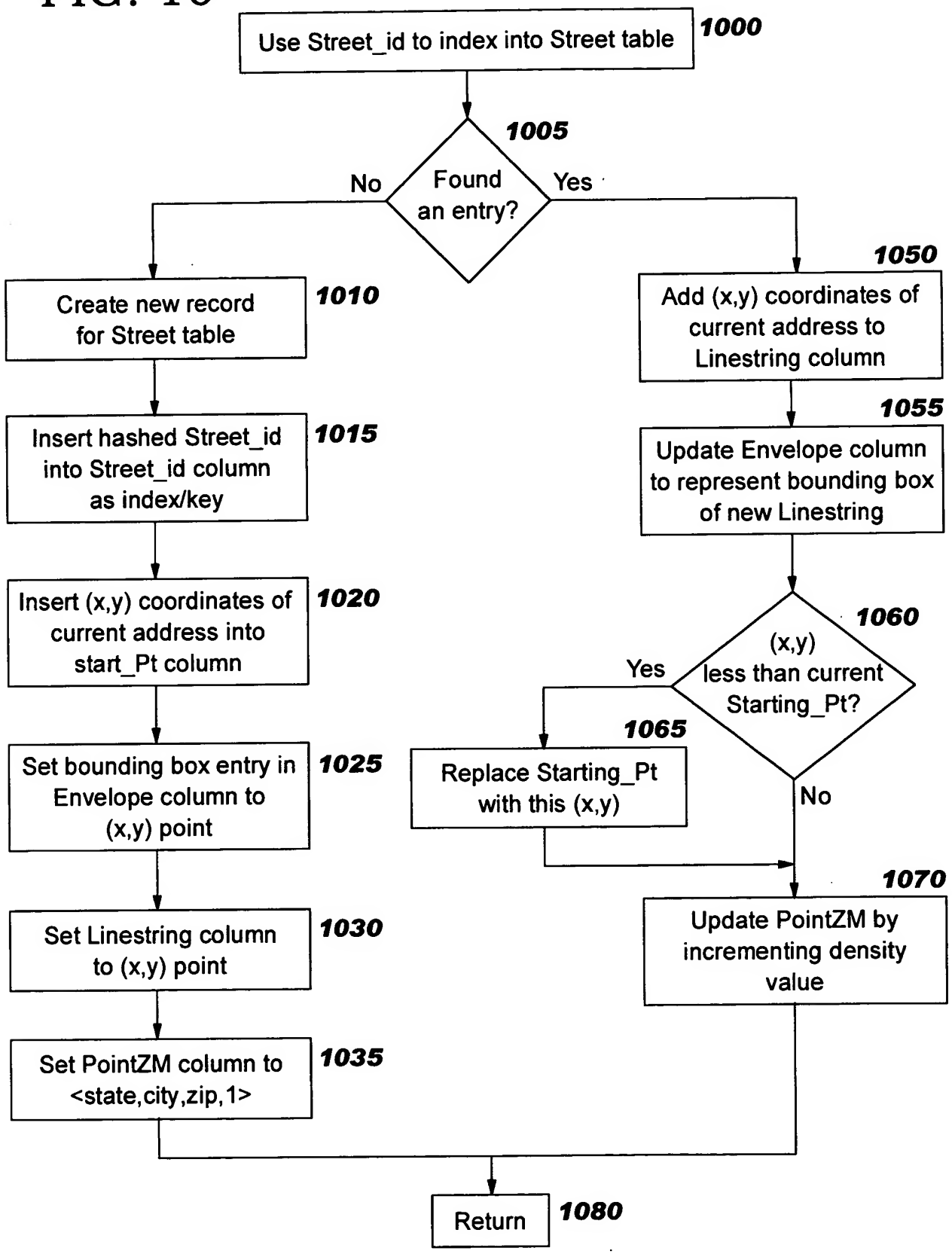

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FIG. 11

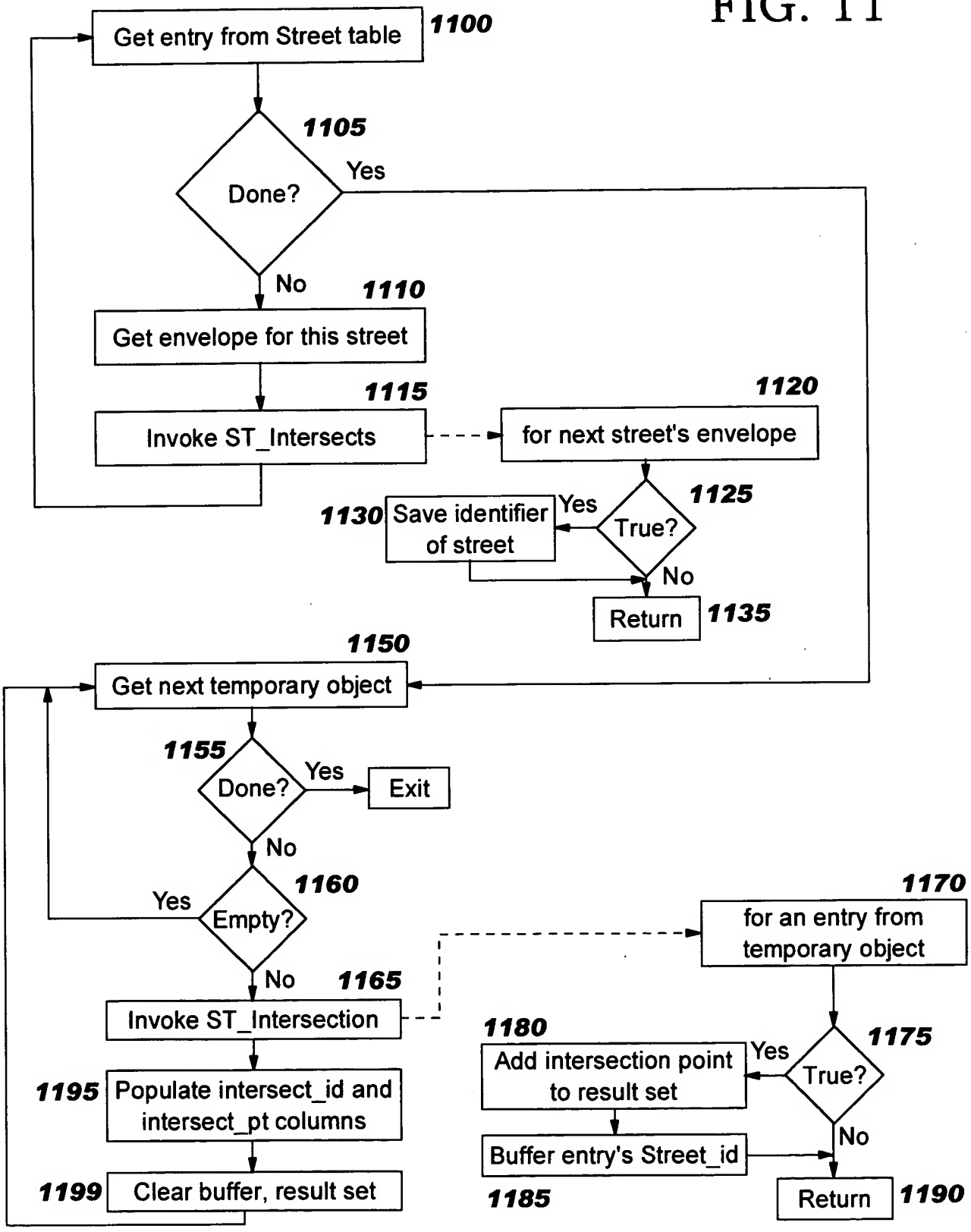

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FIG. 12A

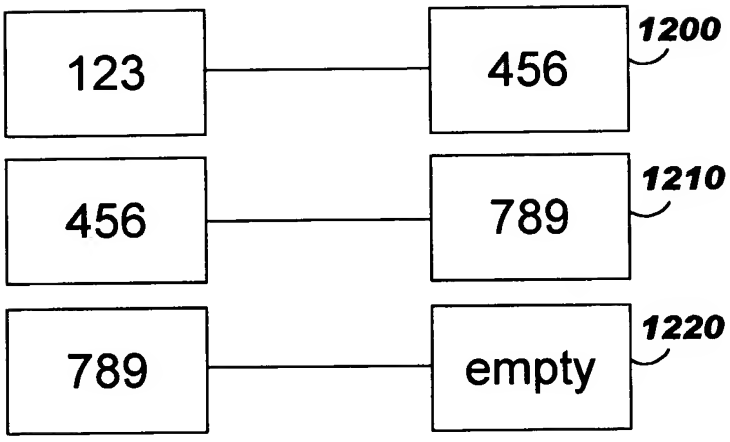
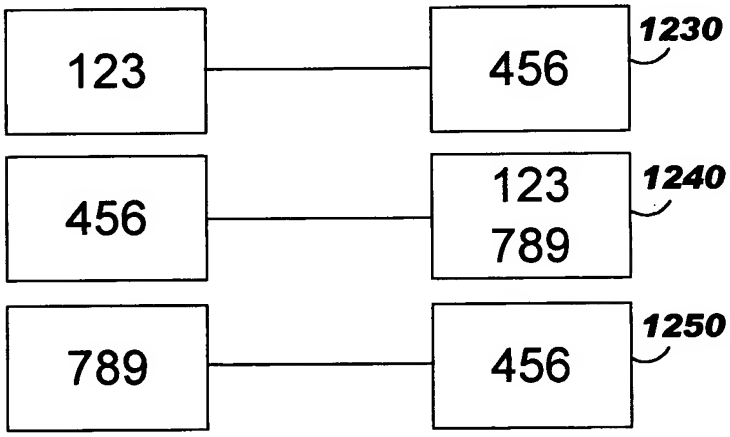


FIG. 12B



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